

Claims:

1 – 18 (canceled)

19. (currently amended) A high temperature gas turbine component comprising:
a root section;
a platform section arranged adjacent to the root section;
a tip section arranged radially opposite the root section;
a leading edge arranged between the platform and tip sections;
a trailing edge arranged downstream of the leading edge; and
a main section arranged between the leading edge, trailing edge, platform section and tip sections,
wherein, a superalloy is precipitation strengthened by the addition of 50 ppm to 500 ~~2000~~ ppm of a strength promoter selected from the group consisting of:

zinc (Zn),
tin (Sn),
gallium (Ga),
selenium (Se), and
arsenic (As).

20. (canceled)

21. (previously presented) The component as claimed in claim 20, wherein the superalloy, further comprises (percent by weight):

- 11 - 13% chromium,
- 3 - 5% tungsten,
- 0.5 - 2.5% molybdenum,
- 3 - 5% aluminum,
- 3 - 5% titanium,
- 3 - 7% tantalum,
- 0 - 12% cobalt,
- 0 - 1% niobium,
- 0 - 2% hafnium,
- 0 - 1% zirconium,
- 0 - 0.05% boron,
- 0 - 0.2% carbon,
- 0.1 - 10% rhenium or ruthenium, and
- remainder nickel, cobalt or iron and impurities.

22. (previously presented) The component as claimed in claim 20, wherein the superalloy further comprises (percent by weight):

- 9 - <11% chromium,
- 3 - 5% tungsten,
- 0.5 - 2.5% molybdenum,
- 3 - 5% aluminum,
- 3 - 5% titanium,
- 3 - 7% tantalum,
- 0 - 12% cobalt,
- 0 - 1% niobium,
- 0 - 2% hafnium,
- 0 - 1% zirconium,
- 0 - 0.05% boron,
- 0 - 0.2% carbon,
- 0.1 - 5% ruthenium, or rhenium, and
- remainder nickel, cobalt or iron and impurities.

23. (currently amended) A gas turbine high temperature resistant component made from a precipitant containing alloy, comprising:

a metallic strength promoter in an amount of 50 ppm to 500 ~~2000~~-ppm that increases the strength of the component by increasing the formation of precipitants where the strength promoter is selected from the group consisting of:

- zinc (Zn),
- tin (Sn),
- gallium (Ga),
- selenium (Se), and
- arsenic (As).

24. (previously presented) The component as claimed in claim 23, wherein the component consists of a nickel-base, cobalt-base or iron-base superalloy.

25. (canceled)

26. (currently amended) The component as claimed in claim ~~25~~ 23, wherein the superalloy contains between 100 to 500 ppm of the strength promoter.

27. (previously presented) The component as claimed in claim 24, wherein the superalloy, further comprises (percent by weight):

11 - 13% chromium,
3 - 5% tungsten,
0.5 - 2.5% molybdenum,
3 - 5% aluminum,
3 - 5% titanium,
3 - 7% tantalum,
0 - 12% cobalt,
0 - 1% niobium,
0 - 2% hafnium,
0 - 1% zirconium,
0 - 0.05% boron,
0 - 0.2% carbon,
0.1 - 10% rhenium or ruthenium, and
remainder nickel, cobalt or iron and impurities.

28. (previously presented) The component as claimed in claim 24, wherein the superalloy further comprises (percent by weight):

9 - <11% chromium,
3 - 5% tungsten,
0.5 - 2.5% molybdenum,
3 - 5% aluminum,
3 - 5% titanium,
3 - 7% tantalum,
0 - 12% cobalt,
0 - 1% niobium,
0 - 2% hafnium,
0 - 1% zirconium,
0 - 0.05% boron,
0 - 0.2% carbon,
0.1 - 5% ruthenium, or rhenium, and
remainder nickel, cobalt or iron and impurities.

29. (previously presented) The component as claimed in claim 28, wherein the superalloy contains 3 - less than 3.5 aluminum percent by weight.

30. (previously presented) The component as claimed in claim 27, wherein the rhenium content is 1.3 - 10 percent by weight.

31. (previously presented) The component as claimed in claim 27, wherein the rhenium content is 1.3 - 5 percent by weight.

32. (previously presented) The component as claimed in claim 31, wherein the ruthenium content is 1.3 - 3 percent by weight.

33. (previously presented) The component as claimed in claim 28 wherein the ruthenium content is 0.5 - 5 percent by weight.

34. (previously presented) The component as claimed in claim 33, wherein the component material has an isotropic distribution, directionally solidified, or single-crystal grain structure.

35. (canceled)

36. (previously presented) The component as claimed in claim 24, wherein the precipitation is the gamma phase.

37. (canceled)

38. (currently amended) A gas turbine engine, comprising:
a rotationally mounted rotor arranged coaxially with the longitudinal axis of the engine;
an intake housing arranged coaxially with the rotor that intakes a working fluid;
a compressor that compresses the working fluid;
an annular combustion chamber comprised of a plurality of components that accepts the compressed working fluid, mixes a fuel with the compressed working fluid and combusts the compressed working fluid and fuel mixture to create a hot working fluid; and
a turbine section that expands the hot working fluid, wherein at least one combustion chamber or turbine component is formed from a nickel, cobalt or iron superalloy that is precipitation strengthened by the addition of 50 ppm to 500 ~~2000~~-ppm of a strength promoter from the group consisting of:

zinc (Zn),
tin (Sn),
gallium (Ga),
selenium (Se), and
arsenic (As).

39. (previously presented) A high temperature gas turbine component comprising:
a root section;
a platform section arranged adjacent to the root section;
a tip section arranged radially opposite the root section;
a leading edge arranged between the platform and tip sections;
a trailing edge arranged downstream of the leading edge; and
a main section arranged between the leading edge, trailing edge, platform section and tip sections,
wherein, a superalloy is precipitation strengthened by the addition of 100 ppm to 500 ppm of a strength promoter, and
wherein the strength promoter is tin (Sn).

40. (previously presented) The component as claimed in claim 26, wherein the selected strength promoter is tin.

41. (previously presented) The engine as claimed in claim 38, wherein the selected strength promoter is tin.

42. (previously presented) The component as claimed in claim 41, wherein the superalloy contains between 100 to 500 ppm of the strength promoter.

43 – 44 (canceled).